UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: AUG 3 0 2016

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
National Bronze and Metals, Inc., Lorain, Ohio

FROM: David Sutlin, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: National Bronze and Metals, Inc.

Facility Location: 5311 West River Road North, Lorain, Ohio 44055

Date of Inspection: August 11, 2016

Lead Inspector: David Sutlin, Environmental Engineer

Other Attendees:
1. Sara Loiacono, EPA, Environmental Scientist
2. João C.F. Saraiva, General Manager

Purpose of Inspection: CAA compliance inspection

Facility Type: secondary bronze and brass foundry

Regulations Central to Inspection: Lead NAAQS, Ohio State SIP

Arrival Time: 9:40 AM
Departure Time: 12:30 PM

Inspection Type:

☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from Mr. Saraiva unless otherwise noted.

Process Description:
This facility produces bronze and other copper-based alloys using a continuous casting process. Leaded bronze, which can contain up to 20% lead, accounts for approximately 40% of production at the facility. The facility currently operates three vertical and three horizontal continuous casting stations each with an electrical induction melting furnace. Metal scrap from accredited sources plus primary metals are charged through a door in the front of each melting furnace, and the alloys are heated to approximately 2300° F. Charcoal and graphite pellets are added as flux to produce a slag which is manually skimmed and removed. The furnace tilts to pour molten metal into a trough feeding a holding furnace (tundish). Each tundish then feeds molten metal continuously into dies of various cross-sectional shapes. The vertical casting station used for leaded-bronze (P030) is equipped with two tundishes/casters.

Emissions from melting are exhausted through a side duct attached directly to the furnace. Emissions from each tundish are collected by a pivoting canopy hood mounted a few feet directly above the tundish. Where required to control fumes, Kaowool® is placed as a cover over the trough feeding the tundish. Emissions from all foundry operations are vented to a single cartridge style baghouse preceded by a spark arrestor.

Staff Interview:
Mr. Saraiva stated that the original facility was built in 1997 for storage, and that the foundry building was added in 2010 with six new furnaces and one used furnace (P026) which was upgraded with a new power inverter in 2014 and is used for vertical casting. Of the six melting furnaces at the facility two can melt up to 3000 lbs. at a time and four can melt up to 5000 lbs. at a time. Stack testing was performed on the foundry baghouse on June 21, 2010. The facility has two additional furnaces permitted but not yet constructed, pending future need.

The facility has 93 employees and operates five days per week, 24 hours per day, but currently shuts down one week per month. The facility has the capacity to produce 1.2 million lbs. per month bronze but is currently averaging 500,000 lbs. per month. Staff are quarterly tested for lead and wear respirators when working with leaded bronze.

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APPENDICES AND ATTACHMENTS

1. **Appendix A: Photo Log**

- Inspection photos: documented in Appendix A, and maintained at:
- C:\Users\dsutlin\Documents\Compliance\Facilities\NBM\Inspection\

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:
EPA toured the foundry where charging, melting, pouring (to tundish), and casting operations were observed. EPA inspected the baghouse serving the foundry and noted the overall pressure drop to be 3.1" w.g. Mr. Saraiva noted that the pressure drop is controlled by a PLC which will activate an alarm if the pressure drop is outside the set points. EPA observed a foundry worker, wearing a respirator, adding charcoal to a tundish containing leaded bronze.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

Requested documents:

- Last four weeks of pressure drop readings at the foundry baghouse.
- Emission calculations to support most recent TRI submission.

Compliance Assistance: Mr. Saraiva asked for assistance with TSCA compliance assistance, and EPA provided a copy of the EPA small business resource sheet with a hotline number for TSCA. In addition, the latest permit for P026 incorrectly describes it as a horizontal rather than vertical induction melting furnace, and EPA suggested informing Ohio EPA. Finally, EPA informed Mr. Saraiva that for the furnaces listed in permit no. P0104000, the facility is required to record not only the presence but also the absence of visible emissions from the stack, daily.

SIGNATURES

Lead Inspector: David Dutton Date: 8/18/16

Section Chief: Brian Dickens Date: 8/30/16

APPENDIX A: PHOTO LOG

- P8110001.JPG – Roof exhaust fan above vertical casting stations
- P8110002.JPG – Melting furnace, P031, which was melting leaded bronze
- P8110003.JPG – Tundish associated with P032 melting furnace
- P8110004.JPG – Tundish associated with P031 melting furnace (right)
- P8110005.JPG – Spark arrestor upstream of foundry baghouse
- P8110006.JPG – Saw used to cut lead ingots, with coolant capture system
- P8110007.JPG – Lead ingots